Improving USGS Rapid Disaster Response

FY 2014 President's Proposed Budget
Total request is $4,832,000 (+$2,507,000 above FY 2012 enacted level)

In the past year, the USGS responded to Hurricanes Sandy and Isaac, wildfires in the West, earthquakes and volcanic activity around the globe, historic floods, and other significant disasters. These events threaten life and property and affect national security and economic vitality. The Nation's emergency managers and public officials depend on USGS science and information to improve disaster response and to better understand hazard risk.

Earthquake Early Warning and Rapid Event Characterization

The USGS and its partners are developing an earthquake early warning system for the West Coast. The proposed budget invests in telecommunications improvements and research needed before the system can be implemented to provide accurate warnings and public alerts before strong shaking arrives at population centers. The upgraded telecommunications capabilities for seismic networks would enable warnings to be delivered more quickly in situations where every second counts. This budget would also build a partnership with social scientists and critical users to understand how best to communicate the technical information to support emergency managers and other decision-makers as they respond to earthquakes. The USGS would also integrate early warnings into the Advanced National Seismic System, enabling earthquake detection and evaluation within seconds. This request builds upon prior USGS investments, through American Recovery and Reinvestment Act funding, to upgrade seismic and GPS networks in California, Oregon and Washington.

Improved Rapid Response to Eruptions of Volcanic Ash

The Icelandic volcanic ash eruptions of April 2010 and May 2011 and the Chilean ash eruption of June 2011 impacted communities and resulted in billions of dollars of disruption and damage. Roughly half of the Nation's 169 volcanoes are potentially dangerous because of the manner in which they erupt and the nearby communities. Volcano monitoring, early warning systems, and pre-crisis planning are crucial in reducing risk to aviation, communities, and infrastructure from volcanic activity.

With the proposed funding, the USGS would expand the development of real-time ash-fall modeling that would give responders and the public information on when and how much ash will accumulate as well as make this modeling operational at NOAA's National Weather Service and the Air Force Weather Agency. The USGS would build a more comprehensive database of ash-fall deposits in the Western United States and upgrade the monitoring network at Mount Hood, a high-threat and ash-producing volcano near Portland, Oregon. Seismic and infrasound sensors would also be installed on Pagan, a high-threat volcano in the Commonwealth of the Northern Mariana Islands. These steps are part of the implementation of the National Volcanic Early Warning System (NVEWS), a proposed national-scale plan to ensure that volcanoes are adequately monitored to protect public safety.

Expanded Debris-Flow Warning System

Debris flows are fast-moving landslides that can destroy property and take lives suddenly and unexpectedly. Areas burned by wildfire are particularly susceptible to this deadly type of landslide. A prototype debris-flow early warning system developed by the USGS and NOAA's National Weather Service is already protecting lives and infrastructure in southern California. The proposed funding would expand the successful partnership to northern California and southern Oregon and support the development of other predictive tools for rainfall intensity and duration as well as landslide susceptibility. Scientists would also expand monitoring in intensely burned areas, which are prone to debris flows.

Disaster Scenarios and Strategic Science Crisis Response

To prepare for the impacts of hazards before they strike, the USGS would expand the development and delivery of disaster scenario products that allow communities to understand hazard impacts and make preparations before disaster strikes. Funding would also aid in the development of a strategic science capability to rapidly deliver scientifically based information on the likely range of impacts from a given natural hazard or other environmental crisis. It would continue to support the rapid implementation of strategic science crisis teams, like those set up during the Deepwater Horizon oil spill and in response to Hurricane Sandy, allowing decision-makers to quickly evaluate long-term consequences of alternative response and recovery strategies.

Additional Budget Request

Enhancing Earthquake Products and Expanding Monitoring in the Central and Eastern United States *

Following every significant earthquake, the USGS quickly distributes several "situational awareness" products that are used by governments and emergency response organizations to gage the earthquake's impact and to plan response activities. USGS products include ShakeMap, ShakeCast, "Did You Feel It?" and Prompt Assessment of Global Earthquakes for Response (PAGER). Funding would be used to improve these products for the Central and Eastern United States. Enhancements include improving the ability to identify mainshock and aftershock sequences; assessing the likelihood of secondary hazards such as liquefaction and landslide probabilities; and populating databases with historical earthquake events since 1973. The USGS would also use this funding to expand seismic network coverage in the Central and Eastern United States, where network coverage is too sparse, resulting in high uncertainties in shaking and loss estimates. This would be done by making permanent 150-200 of the temporary stations of the EarthScope Transportable Array, which is funded by the National Science Foundation (NSF). This project is a collaborative effort between the USGS, NSF, Department of Energy, U.S. Nuclear Regulatory Commission, and other partners.

** This item has a proposed increase of $1.2 million, which is separate from the Improving Rapid Disaster Response Initiative. It is instead a requested increase in the 2014 President's budget for the Earthquake Hazards Program within the Natural Hazards Mission Area.*

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